

**"METHOD AND SYSTEM FOR INCLUSION HASH JOINS AND
EXCLUSION HASH JOINS IN RELATIONAL DATABASES"**

ABSTRACT OF THE DISCLOSURE

[0043] A method, system and apparatus for performing an inclusion hash join and
5 an exclusion hash join are provided. The method enables the joining of an outer table and
an inner table in a database in response to a SQL statement having an inclusion or exclusion
operator while using a hash join to conserve system resources. The method of the present
invention transposes the inner and outer tables to left and right tables, respectively. Next, a
hash table is created from the left table. Thereafter the right table is scanned to obtain hash
10 values that are used to probe the hash table. If the right table hash value matches one of the
values in the hash table, the corresponding right table row is evaluated to determine if actual
values match and, if so, include the current row of the outer table in the result and further
processing for that row is terminated. If an exclusion condition is present, then the hash
table is probed with the hash value of the row of the right table to determine if a match is
15 present. If none of the hash values match, then the exclusion condition is satisfied and the
outer table row is added to the result and further processing for that row ends and the next
row is addressed. If one or more of the hash values match, then the actual values are
compared to determine if the exclusion condition is satisfied.